

CLAIMS

What is claimed is:

1. A load-lock chamber comprising:
 - a chamber wall defining a chamber interior;
 - a bellows housing defined by said chamber wall;
 - a shaft opening provided in said bellows housing;
 - a flexible bellows provided in said bellows housing and sealing said shaft opening from said chamber interior; and
 - a lift shaft having a cassette stage extending through said shaft opening and said bellows into said chamber interior.
2. The load-lock chamber of claim 1 further comprising a shaft rotation device operably engaging said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.
3. The load-lock chamber of claim 1 wherein said bellows comprises a metal alloy.
4. The load-lock chamber of claim 3 further comprising a shaft rotation device operably engaging said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.

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5. The load-lock chamber of claim 2 wherein said shaft rotation device comprises a housing and a housing magnet provided in said housing for magnetically rotating said lift shaft.

6. The load-lock chamber of claim 5 wherein said bellows comprises a metal alloy.

7. The load-lock chamber of claim 3 wherein said metal alloy comprises stainless steel.

8. The load-lock chamber of claim 7 further comprising a shaft rotation device operably engaging said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.

9. The load-lock chamber of claim 8 wherein said shaft rotation device comprises a housing and a housing magnet provided in said housing for magnetically rotating said lift shaft.

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10. A load-lock chamber comprising:
a chamber wall defining a chamber interior;
a bellows housing defined by said chamber wall;
a shaft opening provided in said bellows housing;
a lift shaft having a cassette stage extending through
said shaft opening and said bellows housing and into said chamber
interior;
a bellows mount frame carried by said lift shaft; and
a flexible bellows carried by said bellows mount frame
in said bellows housing and sealing said shaft opening from said
chamber interior.

11. The load-lock chamber of claim 10 further comprising a
shaft rotation device operably engaging said lift shaft for
rotating said lift shaft and said cassette stage in said chamber
interior.

12. The load-lock chamber of claim 10 wherein said bellows
comprises a metal alloy.

13. The load-lock chamber of claim 12 further comprising a
shaft rotation device operably engaging said lift shaft for
rotating said lift shaft and said cassette stage in said chamber
interior.

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14. The load-lock chamber of claim 11 wherein said shaft rotation device comprises a housing and a housing magnet provided in said housing for magnetically rotating said lift shaft.

15. The load-lock chamber of claim 14 wherein said bellows comprises a metal alloy.

16. The load-lock chamber of claim 15 wherein said metal alloy comprises stainless steel.

17. A load-lock chamber comprising:
a chamber wall defining a chamber interior;
a bellows housing defined by said chamber wall;
a shaft opening provided in said bellows housing;
a flexible bellows provided in said bellows housing and sealing said shaft opening from said chamber interior;
a lift shaft having a cassette stage extending through said shaft opening and said bellows into said chamber interior;
and
a shaft rotation device comprising an annular housing magnet surrounding said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.

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18. The load-lock chamber of claim 17 wherein said bellows comprises a metal alloy.

19. The load-lock chamber of claim 18 wherein said metal alloy comprises stainless steel.

20. The load-lock chamber of claim 17 further comprising a bellows mount frame carried by said lift shaft and wherein said bellows is carried by said bellows mount frame.